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HUMOUR APPRECIATION AND NEEDS: EVIDENCE FROM QUESTIONNAIRE, SELF-, AND PEER-RATING DATA

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Summary—Research on the relationship between humour appreciation and needs traditionally was restricted to the investigation of the significance of humour content. The present study extends this scope by relating needs to appreciation of humour structure and to liking of humour in general. Instruments allowing a more comprehensive assessment of both needs and humour appreciation were administered to subjects in two samples ($N = 108$ and 156) of adults. The 3 WD humour test (Ruch, 1983) measures funniness and aversiveness of three humour types (i.e., incongruity-resolution humour, nonsense humour, and sexual humour). A list of 14 needs was assessed via questionnaire (Personality Research Form; Jackson, 1974), self-ratings and six peer-ratings. The results confirm that need for order is related to humour structure. In particular, liking of order correlates positively with funniness of incongruity-resolution based humour (containing fully resolvable incongruities) and disliking lack of order predicts aversiveness of nonsense humour (which generally provides no complete resolution of the incongruity). Certain aspects of need for play are predictive of appreciation of nonsense humour and sexual humour but not of incongruity-resolution humour. The main results are independent of the methods used to assess the need structure.

HUMOUR APPRECIATION AND NEEDS: EVIDENCE FROM QUESTIONNAIRE, SELF-, AND PEER-RATING DATA

INTRODUCTION

Humour theorists from Freud (1905) to Berlyne (1972) agree on the importance of motivational factors in humour appreciation. Among these factors, sex and aggression are the most prominent ones. The significance attributed to them can be estimated from the fact that "sexual" and "aggressive" are humour categories widely accepted by both layperson and researchers. There is disagreement, however, whether appreciation of sexual and aggressive jokes and cartoons reflects the inhibition or the direct expression of the respective need.

Motivational constructs also guided the search for theoretical links between humour and personality. Research conducted within the framework of Freudian theory expected that individuals who repress either sex or aggression, will show preference for humour in the respective category (for more detailed hypotheses see Kline, 1977). Others, however, have made just the opposite predictions: individuals for whom these themes are salient will prefer humour dealing with that particular content (Eysenck & Wilson, 1976). The results, in general, tend to favor the assumption of a positive relationship between expression of needs and humour rather than the inverse relationship. However, the matter is far from settled. The fact that different results were obtained for subgroups of sexual humour additionally complicates the issue (Ruch & Hehl, 1988).

Research relating motivational factors to humour appreciation can be criticized on at least three grounds. First, both the need categories and the humour categories studied were not

based on comprehensive taxonomies but were most frequently chosen arbitrarily. The humour studied most frequently covered the Freudian categories of harmless, sexual, and aggressive humour. There are several problems with the validity of this taxonomy, however (see Ruch, 1992, for a discussion of the issue); for example, no factor of "aggressive" humour could be extracted from several item pools analyzed although they contained jokes and cartoons a priori classified as "aggressive" (Herzog & Larwin, 1988; Ruch, 1984). Given the predominance of interest in sexual and aggressive humour, it is not surprising that the collection of motivational factors investigated as predictors of humour is, in turn, restricted mainly to these two humour categories.

Second, studies focused only on the relation between needs and appreciation of humour content and nearly no attempt was made to relate needs to appreciation of humour structure. This is surprising, since factor analysis of humour stimuli usually yields strong clusters of jokes and cartoons of different content but similar structure. Furthermore, structural properties contribute to perceived funniness even in sexual humour; i.e., in a humour category usually considered to be largely content dominated. Third, the assessment of needs was only based on questionnaire data, allowing no estimation of whether the results obtained are independent of variables like method format (questionnaire vs. ratings) and source of information (self evaluation vs. peer evaluation).

In order to overcome these shortcomings, the present study investigated the relationship between needs and the appreciation of humour considering both humour content and humour structure. Furthermore, the assessment of both humour and needs was based on taxonomies of greater comprehensiveness. Finally, assessment of the individual's need structure was covered by three methods: questionnaire, self-report, and peer-report.

A Taxonomy of Humour

In the present study a humour test (3 WD Humour Test; Ruch, 1983) is employed which is based on a taxonomy of humour derived from factor analytic studies of both humour stimuli and responses to humour. Analyses of different sets of stimuli yielded three dimensions whereas the responses to humour varied along two dimensions.

Stimulus dimensions. Two of the humour categories are heterogeneous with respect to content but are characterized by common structure and only one humour category is content-dominated. Whereas incongruity is a necessary ingredient of any form of humour, the two structural factors mainly differ with respect to the degree of resolution obtainable for the incongruity. Incongruity-resolution (INC-RES) jokes and cartoons are characterized by punch lines in which the surprising incongruity can be completely resolved. The common element in this type of humour is that the recipient first discovers an incongruity which is then fully resolvable upon consideration of information available elsewhere in the joke or cartoon. Although individuals might differ with respect to how they perceive and/or resolve the incongruity, they have the sense of having "gotten the point" or understood the joke once resolution information has been identified.

Nonsense (NON) humour also has a surprising or incongruous punch line, however, "... the punch line may 1) provide no resolution at all, 2) provide a partial resolution (leaving an essential part of the incongruity unresolved), or 3) actually create new absurdities or incongruities." (McGhee, Ruch & Hehl, 1990, p. 124) In nonsense humour the resolution information gives the appearance of making sense out of incongruities without actually doing so. Nonsense humour should not be confused with the so-called "innocent" humour, because it refers to the typical structure of humour rather than to a harmless content.

Sexual (SEX) humour may be based on one structure or the other, but is homogeneous with respect to the sexual content involved. Sex jokes and cartoons typically have two

loadings: one on the sexual humour factor and a second one on one of the two structure factors. According to their loading patterns, the items of the general sexual humour category roughly can be subdivided into three classes of "pure" sexual humour (in which the content largely overpowers the structure), incongruity-resolution based sexual humour, and nonsense based sexual humour. Thus, whereas it is assumed that content and structure affect perceived funniness of all forms of humour, the weight of the two differs from joke to joke resulting in the three factors.

Response dimensions. Results of factor analytic studies (summarized by Ruch, 1992) suggest that the appreciation of humour is defined by two nearly orthogonal components of positive and negative responses which are best represented by ratings of "funniness" and "aversiveness". Maximal appreciation of jokes and cartoons consists of high funniness and low aversiveness, while minimal appreciation occurs if the joke is not considered funny but is found aversive. However, a joke can also be considered not funny but be far from being aversive; or it can make one laugh although there are certain annoying aspects (e.g., one can consider the punch line original or clever but dislike the content of the joke).

Humour and Needs: Some New Hypotheses

In order to obtain a more comprehensive assessment of the individual's need structure, the German version of Jackson's (1974) Personality Research Form (PRF) is used in the present study. The PRF was designed by Jackson to measure a selected and revised list of needs postulated by Murray (1938) comprising the following: need for abasement, achievement, affiliation, aggression, autonomy, change, cognitive structure, deference, dominance, endurance, exhibition, harmavoidance, impulsivity, nurturance, order, play, sentience, social recognition, succorance, and understanding. This questionnaire is considered to be most suitable for the purpose of the study because it specifically allows to investigate the role of needs in appreciation of humour structure and in generalized appreciation of humour.

Need for order and humour structure. Contrary to older beliefs, it is hypothesized, that the relationship between needs and humour appreciation is not restricted to humour content. It is postulated that motivational factors affect appreciation of the structural properties of humour materials too. Evidence from several sources (reviewed by Ruch, 1992) led to the hypotheses that appreciation of the incongruity-resolution structure in humour is a manifestation of a broader need of individuals for contact with structured, stable, unambiguous forms of stimulation, whereas appreciation of the nonsense structure in humour reflects a generalized need for uncertain, unpredictable, and ambiguous stimuli.

Given this theoretical framework, it is hypothesized that need for order will correlate positively with funniness of incongruity-resolution humour (Hypothesis 1) and with aversiveness of nonsense humour (Hypothesis 2). The prediction that individuals with a high need for order will find nonsense humour more aversive than individuals with a lower need for order do (Hypothesis 2) is based on the fact that the punch lines of this humour category do not allow a complete closure; there always is a residue of incongruity. The remaining incongruity frustrates the need for order and thus subjects scoring high in need for order will respond to this type of humour negatively, i.e., with enhanced aversiveness scores. The prediction that individuals with a high need for order will find incongruity-resolution humour more funny than individuals with a lower need for order do (Hypothesis 1) is based on the fact that this humour category allows for a complete resolution of the incongruity induced by the punch line. The complete resolution of incongruity should appeal to those who have a high need for order. Since most sexual humour in the 3 WD humour test is based on the incongruity-resolution structure, a positive correlation between need for order and funniness of sexual humour can be expected too. However, since in this humour category the content

contributes much more to funniness, the coefficients will be lower than for the incongruity-resolution humour category.

Need for play and general appreciation of humour. Two further hypotheses are independent of the distinction between humour content and structure. It is predicted that need for play will be positively correlated with funniness of incongruity-resolution humour, of nonsense humour, and of sexual humour (Hypothesis 3a to 3c) and negatively correlated with their aversiveness (Hypothesis 4a to 4c). Humour researchers (e.g., McGhee, 1979) repeatedly pointed out the important role of a playful attitude in the domain of humour and also Jackson's (1974) description of the high scorer in play, portrays him/her as a person enjoying jokes and funny stories and spending much time with amusements. Empirical evidence for this relationship, however, is still missing. Among the trait adjectives defining a person scoring high in play Jackson lists laughter-loving, joking, mirthful, gleeful, and fun-loving. These attributes would predispose the high scorer in play (relative to the low scorer) to generally enhanced appreciation of humour. The trait description does not include a differentiation between types of humour and therefore, at present, the hypotheses are related to all three humour categories. Since high appreciation of humour incorporates both high funniness and low aversiveness, the hypotheses put forward cover both dimensions of humour appreciation.

Discriminant aspects. The PRF assesses needs which, although considered to be important in other humour theories, are not expected to be related to humour appreciation in the present study and thus allow for testing discriminant validity. In particular, contrary to other studies, no relationship between humour appreciation and need for exhibition, or need for aggression is postulated. No hypothesis was set up for exhibition although the trait description includes that high scorers enjoy having an audience and being witty. This trait thus might be a promising predictor for humour performance, however, in the case of humour appreciation no significant relationship is expected. Furthermore, no hypothesis was set up for need for aggression since factor analytic studies have shown that so called aggressive humour does not form its own category and potential markers for this category are distributed among all humour factors (Herzog & Larwin, 1988; Ruch, 1984) suggesting that the role of aggression in humour appreciation is commonly overestimated.

Although the above considerations included four scales only, the data analyses also will include the other PRF-content scales for exploratory purposes. There is one shortcoming associated with the PRF, namely, that it does not allow for the investigation of the relationship between appreciation of sexual humour and sexual needs. Although a need for sex is included in Murray's list of needs it is unfortunately not adopted in Jackson's PRF. The relationship between sex and humour appreciation, however, already has been studied repeatedly (e.g., Prerost, 1984; Ruch & Hehl, 1988). Hence this does not constitute a reason for rejecting the PRF. Similarly, the failure of a prior study to verify a link between the needs assessed by the PRF and humour does not constitute a problem. In a study of personality characteristics of wits (Clabby, 1980), humour production was not related to the needs investigated. The need for play, impulsivity, dominance, exhibition, change, and abasement did not predict the score on the wit measure. In the present study, however, appreciation rather than production of humour is investigated.

Consideration of method variance. The present study will also test whether the relationship between humour appreciation and needs is affected by method variance. Since the German adaptation of the PRF included an extensive evaluation of its convergent and discriminant validity (Ostendorf, Angleitner & Ruch, 1985), self- and peer-rating forms for the assessment of the PRF needs with known reliability and validity are available.

Since the three data sources for the assessment of need structure share different aspects with the humour measure, a potential effect of method variance can be identified. Three

factors might account for differences in the size of the coefficients obtained for the three methods, namely method format (rating vs. questionnaire), source of information (self evaluation vs. peer evaluation), and difference in reliability. The PRF and the self-rating scales share with the 3 WD the element of self-evaluation. If the results of the peer-ratings are markedly different from these two methods, the results can be explained by the method variance due to the source of information (self evaluation vs. peer evaluation). Self- and peer-rating employ a rating format; so does the 3 WD. A markedly lower outcome for the PRF with its yes/no answer format may be due to the method formats (questionnaire vs. ratings) used. Finally, the PRF and the peer-ratings will have a higher reliability than the self-ratings since the latter are based on one measurement only. Thus, lower coefficients of the self-ratings might be explained by reliability differences.

The predictions for the need-humour relationship are made for all three sources of data. At present, there is no basis for assuming that the differences between the three methods are so pronounced, that the hypotheses apply differently to the three methods. Since with few exceptions (e.g., Babad, 1974; Koppel & Sechrest, 1970), peer-ratings were never used in research on humour and personality, the results obtained for the peer-ratings in the present study will allow for an estimation of the generalizability of results found in other studies employing questionnaire data only.

STUDY I

METHOD

The sample consisted of 108 (47 males, 61 females) students of different academic disciplines at the University of Düsseldorf between ages 18 and 37 years with a mean of 24.9 ($SD = 4.5$). They were paid for their services. Groups of seven subjects, who knew each other well, were tested under standardized laboratory conditions. Each of these seven subjects filled out the PRF and the self-ratings and also served as peer rater for the other six members in the group.

Assessment of Needs

A list of 14 needs was assessed comprising the following: need for achievement, affiliation, aggression, dominance, endurance, exhibition, harmavoidance, impulsivity, nurturance, order, play, social recognition, succorance, and understanding. The subjects' need structure was assessed in form of questionnaire, self-rating, and peer-rating data.

Personality Research Form (PRF). Form A of the German adaption of Jackson's (1974) Personality Research Form was given to subjects. Whereas the original version of the PRF contains 20 needs and two control scales (infrequency and social desirability), the German version by Stumpf *et al.* (1985) consists of 14 content scales and the two control scales only. Abasement, autonomy, change, cognitive structure, deference, and sentience were deleted due to insufficient convergent and discriminant validity. Additionally, the number of items per scale in the German short version of the PRF was reduced from 20 to 14. Alpha-coefficients in the present sample varied between .53 and .84 with a median of .71. The control scales were not taken into account in the present study.

Self-rating. The first form ('global rating form') used contained 14 9-point scales with translations of the trait descriptions given by Jackson (1974) in the PRF manual. One scale

PRF-A	0.01	0.17	-0.06	0.00	-0.10	0.01
Self	0.02	0.11	0.05	0.17	0.06	0.04
Peer	0.04	0.05	0.05	0.12	0.17	0.05
<u>Harmavoidance</u>						
PRF-A	0.11	-0.02	0.05	0.03	0.16	0.22*
Self	-0.06	-0.02	0.08	0.00	-0.00	0.09
Peer	0.13	0.10	0.14	-0.05	-0.05	0.05
<u>Impulsivity</u>						
PRF-A	-0.11	0.04	-0.13	0.07	0.01	0.03
Self	0.04	0.13	0.01	0.14	-0.02	-0.11
Peer	-0.18*	-0.05	-0.19*	0.01	0.01	0.05
<u>Nurturance</u>						
PRF-A	0.23*	-0.03	-0.02	-0.03	0.09	0.08
Self	0.24*	-0.09	-0.06	-0.01	0.12	0.10
Peer	0.01	0.05	-0.08	-0.05	-0.06	0.02
<u>Order</u>						
PRF-A	0.26**	0.12	0.21*	0.02	0.08	0.00
Self	0.21*	0.01	0.21*	0.08	0.18#	0.06
Peer	0.24*	-0.01	0.22*	-0.05	0.10	-0.05
<u>Play</u>						
PRF-A	0.01	0.00	-0.01	-0.13	-0.14	-0.24*
Self	0.09	0.04	0.05	0.06	0.04	-0.06
Peer	-0.18	-0.06	-0.17	-0.01	-0.05	-0.10
<u>Social Recognition</u>						
PRF-A	0.14	0.02	0.02	-0.17	-0.01	0.08
Self	0.09	0.16	0.04	-0.11	-0.10	0.04
Peer	0.23*	-0.09	0.19*	-0.13	0.02	0.02
<u>Succorance</u>						
PRF-A	0.05	0.07	-0.02	-0.06	-0.06	0.02
Self	0.11	0.11	0.14	0.02	0.05	0.05
Peer	0.13	0.08	-0.02	-0.11	-0.04	0.08
<u>Understanding</u>						
PRF-A	-0.13	0.06	-0.06	0.04	-0.02	0.15
Self	0.04	0.15	0.06	-0.04	-0.17	0.02
Peer	0.08	0.19	0.24*	0.07	-0.06	-0.02

Note. # $P < 0.05$ (one-tailed); * $P < 0.05$ (two-tailed); ** $P < 0.01$; *** $P < 0.001$.

Table 1 gives support for the hypotheses that need for order affects humour appreciation. Funniness of incongruity-resolution humour correlates significantly positively with need for order in questionnaire data, self-, and peer-reports. Furthermore, order is also significantly correlated with funniness of sexual humour. These coefficients are numerically lower than the ones for INC-RES_f, as expected. However, the positive correlations between order and aversiveness of nonsense fail to be significant for the PRF and peer rating data and obtains significance for the self rating data only in a one-tailed test.

The hypotheses relating to need for play are not supported at all. There is a negative correlation between play and aversiveness of sexual humour only. Furthermore, need for aggression is not related to any of the humour scales, although "hostile" humour may be found in any of the three humour categories. Finally, exhibition is also not predictive, as expected. There is no other significant relationship between needs and humour covering all three data sources. However, there is a positive correlation between INC-RES_f and achievement and nurturance for the self-report data (questionnaire and self-rating) but not for the peer rating data.

DISCUSSION

Only Hypothesis 1 received support in the first study. Subjects scoring high in need for order judge humour funny in which the incongruity can be resolved completely and in which no traces of incongruity are left over. Furthermore, taking into account that most sexual humour is based on the incongruity-resolution structure, the results found for sexual humour are also compatible with this hypothesis. There is no evidence that the validity of this hypothesis is restricted to self-evaluation techniques or methods with the same format.

Surprisingly, need for order did not predict aversiveness of nonsense humour. Hypothesis 2 predicted that subjects disliking lack of order in general will also respond negatively to unresolved incongruity in humour. One possible explanation for this is that the scale is less discriminative at the low end of the continuum. In fact, inspection of the items of the PRF as well as the trait description used in the self- and peer- ratings reveals that most of the entities relate to liking of order. The items referring to explicit disliking of lack of order are thus less well represented in the total scores of the PRF, self- and peer-ratings. This lack of representation resulted in the failure to verify Hypothesis 2. Another possible explanation would be that it is not clear whether all subjects weighted the different aspects equally when doing the judgement on the global scale. For example, some subjects might neglect the dislike elements totally in their global judgement. These potential shortcomings could be eliminated by a revision of the rating form. Breaking up the global trait descriptions and using the single elements as different ratings would provide three improvements. First, dislike of lack of order will be explicitly considered in separate ratings and thus it is assured, that this aspect contributes to the total judgement with the same weight for every subject. Second, the revision allows for refinements in testing Hypotheses 1 and 2: It is assumed that only those entities which relate to liking of order predict INC-RES_f and only those entities which relate to the dislike of lack of order predict aversiveness of nonsense. The revised hypotheses will be tested by correlating the single entities of need for order with the humour scales. Third, the use of several scales for one trait will also enhance the reliability of the rating method which is especially valuable for the self-ratings (containing one scale used by one person only).

Hypotheses 3 and 4 were also not supported. Irrespective of the assessment method, need for play was not related to appreciation of any of the humour categories. The failure to verify Hypotheses 3 and 4 is puzzling, since enjoying jokes and funny stories is considered to be a characteristic of subjects scoring high on this scale. One possible explanation is that need for play is a more general trait and appreciation of humour is only one element amongst many others. A closer inspection of the trait description suggests that there are elements which might be related to humour appreciation (i.e., enjoys jokes and funny stories, or spends a good deal of time participating in amusements), whereas others (e.g., spends a good deal of time participating in sports or games) show no apparent link to humour appreciation. Thus, for a more precise testing of the hypotheses, it seems again to be necessary to break up the global trait descriptions and use the single elements as different ratings. This will ensure that the representation of the different entities in the total scores is comparable between individuals. This breakdown will also allow a test of the hypothesis, that only those elements of need for play which show some content overlap with humour will correlate with humour appreciation.

An alternative explanation for the lack of correlations is that the student sample has only restricted range of scores in scales like order or play. This assumption is supported by comparing the present statistics with the normative data. Thus, in the next study, a more heterogeneous sample was employed.

STUDY II

The purpose of the second study is threefold. First, the correlations found in Study I should be replicated. Second, it will be tested whether Hypotheses 2 to 4 can be verified using a revised rating form. Splitting up the global trait descriptions and using the single entities as separate items enhances the reliability of the self- and peer-ratings on one hand, and ensures their explicit and equal representation in the total score on the other hand. Third, the consideration of the single entities of the trait descriptions allows for estimation of whether the hypotheses are valid for certain facets of the traits only. In detail, it is postulated that only those facets of need for play which relate to humour or amusement will correlate with humour appreciation whereas the others (relating to sports and games) will not correlate. Furthermore, the hypothesis will be tested, that certain facets of order do relate to aversiveness of nonsense whereas others relate to funniness of incongruity-resolution. Finally, the use of a more heterogeneous sample of adults will provide a more valid testing of the hypotheses by increasing the range of scores in the scales.

METHOD

The sample of the second study consisted of 156 (81 males, 75 females) adults between age 20 and 69 years with a mean of 30.3 years ($SD = 4.0$). They answered the questionnaires at home (following an instruction sheet on how to choose the appropriate conditions) and were also instructed to ask six close friends or relatives to rate them using the peer-rating forms.

Subjects again answered Form A of the PRF and Form K of the 3 WD. Alpha-coefficients of the PRF in the second sample varied between .69 and .85 with a median of .78. In order to enhance the reliability of the ratings, a new rating form was used. In this revised rating form each of the 76 entities of the global descriptions of the high scorers served as a separate rating. There were between 3 and 8 such ratings per scale and they were added to enhance reliability. The internal consistency of the scales varied between .47 and .88 (median = .76) for the self-ratings and between .52 and .84 (median = .79) for the peer-ratings.

RESULTS

Analyses of scales. Product-moment correlations between the humour scales and the questionnaire data, self-report, and peer ratings were computed and are reported in Table 2.

Table 2. Correlation between needs and humour appreciation in Study II

	INC-RES _f	NON _f	SEX _f	INC-RES _a	NON _a	SEX _a
Achievement						
PRF-A	-0.10	-0.22**	-0.05	0.04	0.20*	0.08
Self	-0.10	-0.17*	0.00	0.02	0.18*	0.01
Peer	-0.05	-0.18*	0.00	-0.06	0.13	0.00
Affiliation						
PRF-A	0.07	0.14	0.04	-0.15	-0.21**	-0.16*
Self	0.09	0.12	0.11	-0.14	-0.17*	-0.18*
Peer	0.03	0.10	0.07	-0.05	-0.13	-0.15
Aggression						
PRF-A	0.04	0.04	0.11	0.12	0.01	0.03
Self	-0.08	-0.13	-0.02	0.12	0.06	0.09
Peer	0.03	-0.12	-0.06	0.02	0.10	0.15

Dominance						
PRF-A	-0.11	-0.09	0.08	0.03	0.10	-0.02
Self	-0.02	-0.02	0.09	0.04	0.08	0.04
Peer	0.09	-0.05	0.09	0.09	0.15	0.04
Endurance						
PRF-A	0.04	-0.02	0.04	0.11	0.21**	0.14
Self	0.05	-0.08	0.09	0.04	0.21**	0.04
Peer	0.04	-0.16*	0.03	-0.04	0.15	0.00
Exhibition						
PRF-A	-0.08	0.03	-0.01	-0.05	-0.04	-0.02
Self	0.00	0.03	0.10	-0.06	-0.06	-0.17*
Peer	0.13	0.01	0.11	-0.04	0.03	-0.09
Harmavoidance						
PRF-A	0.23**	0.06	0.11	-0.05	0.12	0.04
Self	0.14	0.16*	0.15	0.10	0.17*	0.01
Peer	0.12	0.02	0.09	0.04	0.09	0.03
Impulsivity						
PRF-A	0.01	0.04	-0.04	0.11	0.04	0.07
Self	0.09	0.03	0.18*	-0.06	-0.04	-0.15
Peer	0.07	0.07	0.11	-0.05	-0.11	-0.21**
Nurturance						
PRF-A	0.08	0.01	0.04	-0.05	0.03	-0.04
Self	0.15	0.04	0.06	-0.08	0.08	-0.01
Peer	0.12	-0.01	-0.04	-0.02	0.06	-0.02
Order						
PRF-A	0.15#	-0.09	0.15#	-0.01	0.14#	0.00
Self	0.14#	-0.11	0.17*	0.05	0.19*	0.02
Peer	0.19*	-0.08	0.16*	0.01	0.16*	-0.03
Play						
PRF-A	0.09	0.20*	0.15#	-0.10	-0.18*	-0.19*
Self	0.10	0.22**	0.25**	-0.13	-0.17*	-0.27***
Peer	0.01	0.17*	0.15#	-0.11	-0.26**	-0.25**
Social Recognition						
PRF-A	0.16*	0.10	0.31***	-0.03	-0.06	-0.17*
Self	0.18*	0.05	0.23**	0.00	0.03	-0.11
Peer	0.24**	-0.04	0.21**	-0.10	0.12	-0.09
Succorance						
PRF-A	0.04	0.10	-0.03	-0.05	-0.11	-0.01
Self	0.09	0.18*	0.12	0.04	-0.06	-0.06
Peer	0.04	0.00	-0.04	-0.04	-0.05	-0.05
Understanding						
PRF-A	-0.22**	0.06	-0.16*	0.02	-0.04	0.05
Self	-0.06	-0.08	0.01	0.04	0.10	0.07
Peer	-0.18*	-0.17*	-0.04	-0.03	-0.01	-0.07

Note. # $P < 0.05$ (one-tailed); * $P < 0.05$ (two-tailed); ** $P < 0.01$; *** $P < 0.001$.

Table 2 shows that funniness of incongruity-resolution humour and of sexual humour again correlates significantly positively with need for order in questionnaire data, self-, and peer-reports (although only when one-tailed tests are performed). Furthermore, contrary to Study I, aversiveness of nonsense consistently yields significant positive correlations too. Play correlates positively with funniness of nonsense humour and sexual humour and negatively with aversiveness of these two humour categories in all three data sources. However, there is no systematic correlation with funniness or aversiveness of incongruity-resolution humour.

As expected, neither aggression nor exhibition are related to any of the humour scales. As in Study I there are a few other correlations reaching significance. Among these scattered

results, one deserves to be mentioned separately. Need for social recognition correlates significantly positively with funniness of incongruity-resolution humour and of sexual humour in the questionnaire data, self-, and peer-reports. The same pattern already emerged in the first study, but was significant in the peer-reports only.

Analyses of the single statements. Product-moment correlations between the humour scales and single items of self- and peer-ratings were computed for order (5 items), play (8 items), and social recognition (5 items). The results are reported in Table 3.

Table 3. Correlations between humour appreciation and items of need for order, play, and social recognition

	INC-RES _f	NON _f	SEX _f	INC-RES _a	NON _a	SEX _a
<u>Need for Order</u>						
Concerned with keeping personal effects neat and organized						
Self	0.21**	-0.10	0.21**	-0.04	0.13	-0.05
Peer	0.24**	-0.01	0.19*	-0.02	0.10	-0.05
Concerned with keeping personal surroundings neat and organized						
Self	0.18*	-0.14	0.16*	0.00	0.15	-0.04
Peer	0.17*	-0.10	0.11	0.02	0.14	-0.01
Interested in developing methods for keeping materials methodically organized						
Self	0.06	-0.05	0.05	-0.07	0.06	-0.02
Peer	0.08	-0.07	0.11	0.04	0.14	0.03
Dislikes clutter and confusion						
Self	0.11	-0.17*	0.15	0.08	0.20*	0.01
Peer	0.19*	-0.10	0.17*	0.04	0.18*	-0.04
Dislikes lack of organization						
Self	0.02	-0.07	0.07	0.16*	0.21**	0.13
Peer	0.12	-0.10	0.09	-0.03	0.14	-0.01
<u>Need for Play</u>						
Does many things "just for fun"						
Self	0.05	0.06	0.08	0.04	0.05	-0.04
Peer	-0.06	0.07	0.00	-0.06	-0.20*	-0.17*
Enjoys jokes						
Self	0.24**	0.28***	0.38***	-0.18*	-0.11	-0.31***
Peer	0.10	0.14	0.30***	-0.11	-0.04	-0.24**
Spends a good deal of time participating in sports						
Self	0.06	-0.05	0.11	-0.03	0.06	-0.03
Peer	-0.05	-0.05	0.10	-0.06	-0.06	-0.14
Spends a good deal of time participating in games						
Self	-0.03	0.07	0.00	-0.17*	-0.24**	-0.13
Peer	-0.04	0.13	-0.04	-0.06	-0.21**	-0.02
Enjoys funny stories						
Self	0.04	0.28***	0.20*	0.01	-0.07	-0.17*
Peer	-0.05	0.18*	0.07	-0.05	-0.21**	-0.15
Spends a good deal of time participating in social activities						
Self	0.03	0.13	0.15	-0.05	-0.17*	-0.19*
Peer	0.04	0.18*	0.06	-0.09	-0.24**	-0.13
Spends a good deal of time participating in amusements						
Self	-0.04	0.13	0.05	-0.13	-0.31***	-0.22**

Peer	-0.02	0.15	0.06	-0.05	-0.27***	-0.18*
Maintains a light-hearted, easy-going attitude toward life						
Self	0.17*	-0.01	0.15	-0.07	0.07	-0.20*
Peer	0.13	0.14	0.20*	-0.08	-0.13	-0.27***
<u>Need for Social Recognition</u>						
Concerned about reputation						
Self	0.22**	0.05	0.19*	-0.04	0.06	-0.08
Peer	0.23**	-0.07	0.25**	-0.10	0.16*	-0.08
Concerned about what other people think of him						
Self	0.16*	0.04	0.16*	-0.06	-0.08	-0.13
Peer	0.19*	0.01	0.13	-0.14	0.04	-0.04
Desires to be held in high esteem by acquaintances						
Self	-0.01	-0.13	0.09	0.04	0.03	-0.02
Peer	0.19*	-0.07	0.16*	-0.08	0.11	-0.11
Works for the approval of others						
Self	0.11	-0.01	0.14	-0.05	-0.06	-0.15
Peer	0.20*	0.00	0.17*	-0.02	0.09	-0.06
Works for the recognition of others						
Self	0.13	0.04	0.16*	0.07	0.12	-0.07
Peer	0.19*	-0.10	0.13	-0.06	0.13	-0.06

Note. * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

Table 3 supports the assumption that single facets of the traits relate to humour appreciation differently. Regarding need for order, funniness of incongruity-resolution humour (and sexual humour) is related to being concerned with keeping personal effects and personal surroundings neat and organized. Finding nonsense humour aversive is related to the dislike of clutter, confusion, and lack of organization. Finally, being interested in developing methods for keeping materials methodically organized is not a predictor of humour appreciation. Thus, the convergence with respect to the emotional quality in response to order and humour emerged: INC-RES_f reflects liking of order whereas NON_a reflects disliking lack of order.

Furthermore, Table 3 confirms that humour appreciation relates to a subset of facets of need for play only. As expected, the entity relating to participation in sports is not related to humour at all and doing many things "just for fun" does not yield coefficients consistent across self- and peer-ratings. The remaining entities correlate with the humour scales quite differently. Funniness of nonsense humour goes along with enjoying funny stories and enjoying jokes (in self-rating only) in general. Nonsense humour is found aversive by subjects not spending a good deal of time participating in amusements, games, or social activities. Furthermore, they are seen by their peers as not enjoying funny stories in general and not doing things "just for fun". Finally, appreciation (high funniness and low aversiveness) of sexual humour goes along with enjoying jokes in general, and additionally, sexual humour is not found aversive by subjects spending a good deal of time participating in amusements and maintaining a light-hearted, easy-going attitude toward life.

Appreciation of incongruity-resolution humour is not systematically related to any aspect of play. Most strikingly, even the two content valid ratings do not yield consistent coefficients: enjoying jokes relates to appreciation of incongruity-resolution humour in the self rating data only and appreciation of this type of humour is not related to enjoying funny stories in general.

The correlation between social recognition and humour is based on certain aspects of the trait only. subjects rating INC-RES humour as funny are concerned about their reputation and what other people think of them. They are seen by their peers as desiring to be held in high esteem by acquaintances and to work for the approval and the recognition of others. These correlations, however, are not found for the self-rating data. The only consistent finding for subjects scoring high in funniness of sexual humour is that they are concerned about their reputation.

DISCUSSION

The three aims of Study II were achieved. First, the correlations found in Study I were replicated in an independent sample. The heterogeneity of the second sample increases the generalizability of this finding. Therefore, thus, Hypothesis 1 is the most strongly supported in the present study. Second, the Hypotheses 2 to 4, which Study I failed to verify, received support in Study II. There are several possible explanations for this, namely the use of the revised rating form, the better recruitment of peers, and the use of a more heterogeneous sample. The use of the single entities of the global trait descriptions as items enhanced reliability of the rating forms and thus, in turn, higher coefficients are facilitated. This revised rating format also ensured the explicit and equal representation of all aspects of the trait in the total score. In Study I the subjects were confronted with the global trait description and it was not clear how they weighed the different entities in their judgement. Thus, they might have been biased to an unknown extent. Furthermore, the procedure of data collection in the second sample led to a better recruitment of peers. There were fewer restrictions than in Study I, where, for example, groups of seven subjects which were supposed to know each other very well had to appear in the laboratory simultaneously. In Study II subjects could choose their peers more freely, which might have enhanced the validity of the peer assessment. Finally, the fact that the hypotheses 2 to 4 received support from the PRF data (which was identical in both samples), suggests that peculiarities of the sample (mainly the greater heterogeneity) is already responsible for the better results.

Third, the use of the revised rating format allowed for the demonstration that different aspects of the traits correlate with humour differently. Whereas some aspects provided full support for the hypotheses others did not correlate at all. The findings that the hypotheses are valid for certain facets of the traits only allows for a refinement of the hypotheses.

GENERAL DISCUSSION

The main finding of the present study is that needs are related to the structure of humour, and not only to humour content, as hypothesized traditionally. Individuals with a high need for order appreciate jokes and cartoons which allow a complete resolution of incongruity and find cartoons aversive, in which a residue of incongruity remains. Thus, the subjects' general dislike of confusion, clutter and lack of organization extends to dislike of punch lines which contain unresolved incongruities. These aspects of need for order were predictive because they explicitly emphasize the presence of negative feelings in the face of lack of order. There is a congruence with the emotionally negative tone of the aversiveness scale. Similarly, the tendency to keep personal surroundings and personal effects neat and organized extends to liking of punch lines in which the surprise induced by the incongruity can be overcome completely. Again, only the facets of order referring to positive evaluation of order (but not to negative evaluation of lack of order) predict positively toned response (i.e., funniness) to incongruity-resolution based humour. The role of need for order in sexual humour supports

the view that subjects respond to the structural properties of sexual humour as well as to the content.

Whereas it should be acknowledged that the coefficients obtained were small, usually not exceeding .30, two facts enhance the credibility of the findings. First, the nature of the concepts investigated does not suggest high coefficients. For example, the need for order only contributes to funniness of particular types of humour but is not a determinant of the emergence of funniness itself. Ordered stimulus configurations can be appealing but they are not funny by themselves. Considering that, on the surface, need for order and humour do not have an apparent link, the consistent finding of a positive correlation between them is a noteworthy finding. Second, the results found for need for order are in line with research on related concepts found in prior studies for variables like intolerance of ambiguity or conservatism (see Ruch, 1992, for a review). In these studies subjects scoring high in intolerance of ambiguity and conservatism considered incongruity-resolution based humour more funny and nonsense humour more aversive relative to those with low scores in the respective traits. Thus, these variables exhibit a similar correlational pattern as need for order. Given the definition of these traits, need for order appears to be a defining element of both conservatism and intolerance of ambiguity. Whereas the link between intolerance of ambiguity and need for order is apparent, the theory of Wilson (1973) demonstrates the relationship between order and conservatism. According to Wilson's "dynamic theory of conservatism" this trait reflects a generalized fear of both stimulus and response uncertainty (in the information theory sense). This should lead more conservative individuals to show greater avoidance and dislike of novel, complex, unfamiliar, incongruous events and to prefer and seek out stimuli which are simpler, more familiar and congruent. Positive correlations between order and conservatism found in several studies confirm the hypothesized link between the traits (Wilson, 1985). Conservatism also might mediate the relationship found between social recognition and funniness of incongruity-resolution based humour. Conservatism and need for social recognition conceptually share the element of conformity and also turn out empirically to be positively correlated (Wilson, 1985).

The results of the present studies also increase our understanding of the validity of both concepts, need for play and humour appreciation. Whereas the present studies provide the first empirical evidence for the claimed importance (e.g., McGhee, 1979) of individual differences in playfulness for the realm of humour, the results also cast doubts on the assumption that the PRF-need for play scale is a predictor of enjoying jokes or humour per se. Appreciation of incongruity-resolution humour, which is the most powerful structure-dominated humour category, is not related to play at all. This, in turn, suggests that appreciation of this type of humour is not an expression of playfulness. This assumption is also underscored by the nature of the most potent predictors of this form of humour like conservatism, intolerance of ambiguity, or super ego strength. However, appreciation of sexual humour and nonsense humour did relate to some facets of need for play albeit not to all of them. Appreciation of sexual humour seems to be related to the play aspects of enjoying jokes, amusement and having a light-hearted, easy-going attitude toward life. The lack of correlation with incongruity-resolution humour (which forms the basis of most sexual humour) suggests, that the coefficients found for sexual humour relate to appreciation of the content of this humour category. Indeed, it was frequently assumed that variables like hedonism and extraversion are predictors of appreciation of (the content of) sexual humour (see, for example, Ruch & Hehl, 1988). Appreciation of nonsense humour is related to the play aspects of enjoying funny stories, playing games, amusements, and social activities. This fits into the picture of the high scorer in funniness of nonsense who is characterized traits like experience seeking, hedonism, sexual libido, or general sensation seeking (see Ruch, 1992, for a review).

The present studies demonstrated discriminant validity as well. Scales like aggression or exhibition were not related to appreciation of humour. Aggression fails to emerge as a separate humour category in factor analytic studies and also does not affect appreciation of humour as a personality trait. Need for exhibition might be an important predictor for the frequency of entertaining others with jokes and humorous stories but does not seem to play a role in humour appreciation.

Finally, the present studies confirm that the relationships found between humour appreciation and personality is not due to method overlap. Since humour is a highly desirable trait, one could have argued that a correlation between humour and favorable needs are artifacts due to method variance. The findings reported are also independent of the method format (questionnaire vs. rating scales) and rater perspective (self- vs. peer evaluation) used. One could have argued that the self- and peer-ratings would profit from the fact that they share the rating format with the humour test and thus would yield higher coefficients. Furthermore, since the self-evaluation methods (PRF, self-report) do not differ from the peer-report a further possible counter argument can be ruled out. The main results are not dependent on the self-description of the beholders of the needs which is based on their ability and willingness to report but can also be found when the need structure is assessed via the ratings of good acquaintances. There was, however, evidence for the effects of rater perspective when the single entities of the traits were analyzed. For example, the play elements of liking jokes and funny stories predicted humour appreciation much better in the self- than in the peer-rating. Nevertheless, the stability of findings across the three data sources support the validity of findings usually obtained for the questionnaire domain only.

The present studies extend the validity of the role motivational factors play in humour appreciation. Thus, the humour-needs relationship should be reformulated. Whereas traditional thinking restricted needs to relate to humour content only, it could be demonstrated that needs relate to appreciation of humour structure and to appreciation of humour in general as well. It would be highly desirable for further studies to combine these three sets of predictors and to test them simultaneously. Whereas sexual humour would specifically profit from the combination of predictors of humour structure and content, the use of a need for play scale seems to add to the prediction of appreciation of humour in general (at least of several forms of humour).

Authors Notes

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